

SEQUENCE LISTING

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<120> NUCLEIC ACID CONSTRUCT CONTAINING FULL LENGTH GENOME OF HUMAN
HEPATITIS C VIRUS ... AND METHOD OF PRODUCING HEPATITIS C VIRUS
PARTICLE

<130> 1254-0321PUS1

<140> US 10/589,902
<141> 2006-08-17

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<151> 2004-02-20

<160> 26

<170> PatentIn Ver. 2.1

<210> 1
<211> 340
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(340)
<223> 5' non-translated region of hepatitis C virus genomic RNA
derived from JFH-1 clone

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cuucacgcag aaagcgccua gccauggcgu uaguaugagu gucguacagc cuccaggccc 120
cccccuccccg ggagagccau aguggucugc ggaaccggug aguacaccgg aauugccggg 180
aagacugggu ccuuucuugg auaaacccac ucuaugcccg gccauuuggg cgugcccccg 240
caagacugcu agccgaguag cguuggguug cgaaaggccu ugugguacug ccugauaggg 300
cgcuugcgag ugccccggga ggucucguag accgugcacc 340

<210> 2
<211> 573
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(573)
<223> core protein-coding sequence of hepatitis C virus genomic RNA

derived from JFH-1 clone

<400> 2

augagcacaa auccuaaacc ucaaagaaaa accaaaagaa acaccaaccg ucgcccagaa 60
gacguuaagu ucccgggcgg cggccagauc guuggcggag uauacuuguu gccgcgcagg 120
ggccccaggu ugggugugcg cacgacaagg aaaacuucgg agcgguccca gccacguggg 180
agacgccagc ccauccccaa agaucggcgc uccacuggca aggccugggg aaaaccaggu 240
cgccccuggc cccuauaugg gaaugagggg cucggcuggg caggauggcu ccuguccccc 300
cgaggcucuc gccccuccug gggcccccacu gaccccccggc auaggucgcg caacgugggu 360
aaagucaucg acacccuaac guguggcuuu gccgaccuca uggguacau ccccgucgua 420
ggcgccccgc uuaguggcgc cgccagagcu gucgcgacg gcgugagagu ccuggaggac 480
gggguuaauu augcaacagg gaaccuaccc ggguuucccu uuucuaucuu cuugcuggcc 540
cuguuguccu gcaucaccgu uccggucucu gcu 573

<210> 3

<211> 576

<212> RNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<222> (1)..(576)

<223> E1 protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

<400> 3

gcccagguga agaaauaccag uagcagcuac auggugacca augacugcuc caaugacagc 60
aucacuuggc agcucgaggc ugcgguucuc cacguccccc ggugcguccc gugcgagaga 120
guggggaaua cgucacggug uugggugcca gucucgcca acauggcugu gccgcagccc 180
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ugcucugcuc ucuacguggg ggaccucugu ggccccgguga ugcucgcggc ccagguguuc 300
aucgucucgc cgcaguacca cugguuugug caagaaugca auugcuccau cuacccuggc 360
accaucacug gacaccgcau ggcaugggac augaugauga acuggucgcc cacggccacc 420
augauccugg cguacgugau gcgcgcccc gaggucauca uagacaucgu uagcggggcu 480
cacuggggcg ucauguucgg cuuggccuac uucucuaugc agggagcgug ggcgaagguc 540
auugucaucc uucugcuggc cgcuggggug gacgcg 576

<210> 4

<211> 1290

<212> RNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<222> (1)..(1290)

<223> E2 protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

<400> 4

ggcaccacca ccguuggagg cgcuguugca cguuccacca acgugauugc cggcguguuc 60
agccauggcc cucagcagaa cauucagcuc auuuacacca acggcaguug gcacaucaac 120
cguacugccu ugaauugcaa ugacuccuug aacaccggcu uuucucgcggc cuuguucuac 180
accaaccgcu uuaacucguc agggugucca gggcgccugu ccgcccugccg caacaucgag 240
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augaggccgu acugcuggca cuaccccca aagccgugug gcuaguccc cgcgaggucu 360
guguguggcc caguguacug uuucacccccc agcccgguag uagugggcac gaccgacaga 420
cguggagugc ccaccuacac auggggagag aaugagacag augucuuccu acugaacagc 480
acccgaccgc cgccaggcuc augguucggc ugcacgugga ugaacuccac ugguuucacc 540
aagacuugug gcgccacc uugccgcacc agagcugacu ucaacgcccag cacggacuug 600
uugugcccua cggauuguuu uaggaagcau ccugaugcca cuuauuuua gugugguucu 660
gggcccuggc ucacaccaaa gugccugguc cacuacccuu acagacucug gcauuacccc 720
ugcacaguca auuuuaccau cuucaagaua agaauguaug uaggggggg ugagcacagg 780
cucacggccg caugcaacuu cacucguggg gaucgcugcg acuuggagga cagggacagg 840
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caauacaugu auggccucuc accugcuauc acaaaauacg ucguucgaug ggaguggug 1020
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ggucgggugg ucccccugac caccuauugc cucacuggcc uauggccuu cugccuacug 1260
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<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(651)
<223> NS2 protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

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acacucaccc cgggguaauaa gaccuccuc ggccaguguc uguggugguu gugcuauuc 120
cugacccugg gggaaagccau gauucaggag uggguaccac ccaugcaggu ggcggcggc 180
cgcgauuggca ucgcgugggc cgucacuaua uucugcccgg gugugguguu ugacauuacc 240
aaauggcuuu uggcguugcu uggccugcu uaccucuuua gggccgcuuu gacacaugug 300
ccguacuuucg ucagagcuca cgcucugaua aggguaugcg cuuuggugaa gcagcucgc 360
ggggguaggu auguucaggu ggcgcuaauug gcccuuggca gguggacugg caccuacauc 420
uaugaccacc ucacaccuuu gucggacugg gccgcuagcg gccugcgcga cuuagcgguc 480
gccguggaac ccaucaucuu caguccgaug gagaagaagg ucaucgucug gggagcggag 540
acggcugcau guggggacau ucuacaugga cuucccgugu ccgccccacu cgccaggag 600
auccuccucg gcccagcuga ugcuacacc uccaagggu ggaagcuuccu u 651

<210> 6
<211> 1893
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1893)
<223> NS3 protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

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augacggggc gugacaggac agaacaggcc ggggaagucc aaauccuguc cacagucucu 120
 caguccuucc ucggaacaac caucucgggg guuuugugga cuguuuacca cggagcuggc 180
 aacaagacuc uagccggcuu acgggguccg gucacgcaga uguacucgag ugcugagggg 240
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 gccgucgacc uauaucuggu cacgcggaac gcugauguca ucccggcucg gagacgcggg 360
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 gggccggugc ucugccuag gggccacguc guugggcucu uccgagcagc ugugugcucu 480
 cggggcgugg ccaaauccau cgauuucauc cccguugaga cacucgacgu uguuacaagg 540
 ucucccacuu ucagugacaa cagcacgcca ccggcugugc cccagaccua ucaggucggg 600
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 uaccuaucca aggacacauugg caucaauccc aacauuagga cuggagucag gaccgugaug 780
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 ggccuacccg ugugucaaga ccaucuugaa uuuugggagg caguuuucac cgccucaca 1620
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 auguggaagu gccuggcccg acucaagccu acgcuugcgg gccccacacc ucuccuguac 1800
 cguuuggggc cuauuaccaa ugaggucacc cucacacacc cugggacgaa guacaucgccc 1860
 acaugcaugc aagcugaccu ugaggugcaug acc 1893

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 <212> RNA
 <213> Hepatitis C virus

<220>
 <221> misc_feature
 <222> (1)..(162)
 <223> NS4A protein-coding sequence of hepatitis C virus genomic RNA
 derived from JFH-1 clone

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 ggaugcguuu ccaucaucgg ccgcuugcac gucaaccagc gagucgucgu ugcccggau 120
 aaggaggucc uguauugagc uuuugauugag auggaggaau gc 162

<210> 8
 <211> 783
 <212> RNA
 <213> Hepatitis C virus

<220>
 <221> misc_feature

<222> (1)..(783)
<223> NS4B protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

<400> 8
gccucuaggg cggcucuau cgaagagggg cagcgauag ccgagauguu gaaguccaag 60
auccaaggcu ugcugcagca ggccucuaag caggcccagg acauacaacc cgcuaugcag 120
gcuucauggc ccaaagugga acaauuuuugg gccagacaca uguggaacuu cauuagggc 180
auccaauacc ucgcaggauu gucaacacug ccagggaaacc ccgcgguggc uuccaugaug 240
gcauucagug ccgcccucac caguuccguug ucgaccagua ccaccauccu ucucaacauc 300
augggaggcu gguuagcguc ccagaucgca ccacccgcgg gggccaccgg cuuugucguc 360
aguggccugg ugccccgcugc cgugggcagc auaggccugg guaaggugcu gguggacauc 420
cuggcaggau auggugcggg cauuucgggg gcccucguug caucaagau caugucuggc 480
gagaagccu cuauuggaaga ugucaucaau cuacugccug ggauccuguc uccgggagcc 540
cugguggugg gggucaucug cgccgcceu uugccgc acgugggacc gggggagggc 600
gcgguccaaau ggaugaacag gcuuauugcc uuugcuucca gaggaaacca cgucgccccu 660
acucacuacg ugacggaguc ggaugcgucg cagcguguga cccaacuacu ugucucuu 720
acuauaacca gccuacuacag aagacuccac aauuggauaa cugaggacug ccccauccca 780
ugc 783

<210> 9
<211> 1398
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1398)
<223> NS5A protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

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aauuggcuga ccucuaaaauu guuccccaag cugcccgccc ucccccuaucu cucuugucaa 120
aagggguaca agggugugug ggccggcacu ggcaucauga ccacgcgcug cccuugcgcc 180
gccaacaucu cuggcaaugu ccgcccugggc ucuaugagga ucacaggccc uaaaaccugc 240
augaacaccu ggcaggggac cuuuccuauc aauugcuaca cggagggcca gugcgcccg 300
aaacccccc gcaacuacaa gaccgcuauc uggagggugg cggccucgga guacgcggag 360
gugacgcagc augggucua cuccuaugua acaggacuga ccacugacaa ucugaaaaauu 420
ccuugccaaac uaccuucucc agaguuuuuc uccuggugg acggugugca gauccauagg 480
uuugcaccca caccaaagcc guuuuuuccgg gaugaggugu cguucugcgu ugcccuaau 540
uccuaugcug ucggguccca gcuuuccugu gaaccugagc ccgacgcaga cguauugagg 600
uccaugguaa cagauccgccc ccacaucacg gcggagacug cggcgccggc cuuggcacgg 660
ggaucaccuc caucugaggc gagcuccuca gugagccagc uaucagcacc gucgugccgg 720
gccaccugca ccacccacag caacaccuaa gacguggaca uggucaugc caaccugcuc 780
auggagggcg guguggcuca gacagagccu gaguccaggg ugcccguuc ggacuuucuc 840
gagccaaugg ccgaggaaga gagcgaccuu gagccucaa uaccaucgga gugcaugcuc 900
cccaggagcg gguuuccacg ggccuuuaccg gcuuugggcac ggccugacua caacccgccc 960
cucguggaau cguggaggag gccagauuac caaccgcaca ccguugcugg uugugcucuc 1020
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uccccuggug agccggcccc cucagagaca gguuccgccc ccucuaugcc ccccccucgag 1260
ggggagccug gagauccgga ccugagacu gaucagguag agcuucaacc uccccccca 1320
gggggggggg uagcucccgg uucgggcucg gggucuuggu cuacuugcuc cgaggaggac 1380
gauaccaccc ugugcugc 1398

<210> 10
<211> 1773
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1773)
<223> NS5B protein-coding sequence of hepatitis C virus genomic RNA
derived from JFH-1 clone

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uugccaaauca acccuuugag uaacucgcug uugcgauacc auaacaaggua guacuguaca 120
acaucaaaga gcgccucaca gagggcuaaa aagguaacuu uugacaggac gcaagugcuc 180
gacgcccacuu augacucagu cuuaaaggac aucaagcuag cggcuuccaa ggucagcgca 240
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uccgugugga aggaccuccu ggaagaccca caaacaccaa uucccacaac caucauggcc 420
aaaaaaugagg uguucugcgu ggaccccgcc aaggggggua agaaaccagc ugcuccucauc 480
guuuacccug accucggcgu cggggcugc gagaaaaugg cccucuauga cauuacacaa 540
aagcuuccuc aggccgguaau gggagcuiucc uauggcuiucc aguacucccc ugcccacgg 600
guggaguauc ucuugaaagc augggcggaa aagaaggacc ccauggguuu uucguaugau 660
acccgaugcu ucgacucaac cgucacugag agagacauca ggaccgagga guccauauac 720
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guagggguag gccucuuccu acuccccgcu cg 1773

<210> 11
<211> 239
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(239)
<223> 3' non-translated region of hepatitis C virus genomic RNA
derived from JFH-1 clone

<400> 11

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uuuuuuuuuu uuuuuuuuuuu uuuuuuuuuuu uuuuuuuuuuu cccucuuucu ucccuucuca 120
ucuuauucua cuuuuuuuu ugguggcucc aucuuagccc uagucacggc uagcugugaa 180
agguccguga gccgcaugac ugcagagagu gccguaacug gucucucugc agaucaugu 239

<210> 12

<211> 9707

<212> RNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<222> (1)..(9707)

<223> full-length Hepatitis C virus genomic RNA derived from JFH-1
clone

<400> 12

gaauucuaau acgacucacu auagaccugc cccuaauagg ggcgacacuc cgccaugaa 60
cacuccccug ugaggaacua cugucuucac gcagaaagcg ccuagccaug gcuuaguau 120
gagugucguac cagccuccag gcccccccu cccgggagag ccauaguggu cugcggaaacc 180
ggugaguaca ccggaaauugc cgggaagacu ggguccuuuc uggauaaac ccacucuaug 240
cccgcccauu ugggcgugcc cccgcaagac ugcuagccga guagcguugg guugcgaaag 300
gccuuguggu acugccugau agggcgcuug cgagugccccc gggaggucuc guagaccgug 360
caccaugagc acaaauccua aaccucaaag aaaaaccaaag agaaacacca accgucgccc 420
agaagacguu aaguucccg gggcgccca gaucguuggc ggaguauacu uguugccgug 480
caggggcccc agguugggug ugcgcacgac aaggaaaacu ucggagcggu cccagccacg 540
ugggagacgc cagcccaucc ccaaagaucg ggcuccacu ggcaaggccu gggaaaacc 600
aggucgcccc uggcccccua augggaauga gggacucggc uggcaggau ggcuccuguc 660
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gguaaaguc aucgacaccc uaacgugugg cuuugccgac cucauggggu acauccccgu 780
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ggccugug uccugcauca cgguuccggu cucugcugcc caggugaaga auaccaguag 960
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cacgaccgac agacguggag ugcccaccua cacaugggg a gagaugaga cagaugucuu 1980
ccuacugaac agcaccggac cgccgcaggc cucaugggu cgcugcagc ggaugaacuc 2040
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uaaguguggu ucuggggccu ggcucacacc aaagugccug guccacuacc cuuacagacu 2220
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 <223> full-length Hepatitis C virus genomic RNA derived from JFH-1
 clone, wherein an amino acid motif GDD has been mutated into GND

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